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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,146	12/12/2003	Alok Kumar	42P17964	3511

7590 07/21/2008
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EXAMINER

MOORE JR, MICHAEL J

ART UNIT

PAPER NUMBER

2619

MAIL DATE

DELIVERY MODE

07/21/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/735,146

Applicant(s)

KUMAR ET AL.

Examiner

MICHAEL J. MOORE JR

Art Unit

2619

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-12 and 14-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-12 and 14-16 is/are allowed.
- 6) ☒ Claim(s) 1, 6-8 and 17-26 is/are rejected.
- 7) ☐ Claim(s) 3-5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 January 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Specification

Amendments made by Applicant to the specification to obviate the objections presented in the previous Office Action are proper and have been entered. These objections have been withdrawn.

Drawings

A replacement drawing of Figure 6 was received on 1/2/08. This drawing is acceptable and has been entered.

Claim Objections

Amendments made by Applicant to claims **7, 14, 15, and 25** to obviate the claim objections presented in the previous Office Action are proper and have been entered. These objections have been withdrawn.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims **17-26** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, support for the amended limitation "a computer-accessible storage medium that provides instructions" is not present in the originally filed specification. Therefore, it is held that this amendment constitutes new matter.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims **17-26** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, claim **17** claims "a computer-accessible storage medium that provides instructions". This language is vague and indefinite because it is unclear how the medium "provides" instructions. A medium can have instructions stored on it, recorded on it, etc, but it is not clear how it can just provide instructions. Claims **18-26** are also rejected since they depend from claim **17** and contain the same deficiency.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims **1, 7, and 8** rejected under 35 U.S.C. 102(e) as being anticipated by Fedorkow et al. (U.S. 7,230,917) (hereinafter "Fedorkow").

Regarding claim **1**, "determining a new enqueue slot of a circular queue having N slots into which a queue element may be enqueued" and "setting a last enqueue slot (LES) pointer currently designating an old enqueue slot to designate the new enqueue slot after determining the new enqueue slot" is anticipated by buffer manager 1010 of Figure 10 that maintains a head pointer 1032 (points to particular enqueue slot) that is used to load data (queue element) in FIFO 1030 (circular queue having slots) as spoken of on column 15, lines 36-40.

"Determining whether the circular queue is full via executing a check comparing relative positions of the new enqueue slot and a current dequeue slot (CDS)" is anticipated by the buffer manager 1010 of Figure 10 that calculates the depth (fullness) of the FIFO (circular queue) by subtracting the value of the tail pointer 1034 (points to current dequeue slot) from the value of the head pointer 1032 (points to enqueue slot) as spoken of on column 15, lines 40-46.

"Wherein the check determines whether enqueueing the queue element into the new enqueue slot would result in an overflow condition of the circular queue" is anticipated by comparator 1050 of Figure 10 that compares the calculated depth with a threshold, and as a result of this comparison showing that the depth is above the threshold (indicates full), further traffic is susceptible to overflow as spoken of on column 5, lines 30-34.

"Dropping the queue element, if the overflow condition would result from enqueueing the queue element into the new enqueue slot" is anticipated by the refraining from sending a packet to a particular queue (dropping the queue element) in response to detection of a potential overflow situation as spoken of on column 12, lines 32-42.

Lastly, "enqueueing the queue element into the new enqueue slot, if the circular queue is not full" is anticipated by comparator 1050 of Figure 10 that compares the calculated depth with a threshold, and as a result of this comparison showing that the depth is below the threshold (indicates not full), more traffic is accepted for the FIFO queue (circular queue) as spoken of on column 5, lines 27-31, and column 15, lines 46-49.

Regarding claim 7, "wherein each of the N slots of the circular queue can buffer multiple queue elements corresponding to multiple logical queues, wherein the queue element corresponds to a particular one of the multiple logical queues, and wherein the new enqueue slot corresponds to the particular one of the multiple logical queues" is anticipated by packet memory 550 of Figure 5 that is organized as a group of queues (multiple logical queues) per output channel as spoken of on column 11, lines 15-20.

Regarding claim 8, "determining whether enqueueing the queue element into the new enqueue slot of the circular queue would result in an overflow condition of the particular one of the multiple logical queues" is anticipated by comparator 1050 of Figure 10 that compares the calculated depth with a threshold, and as a result of this comparison showing that the depth is above the threshold (indicates full), further traffic is susceptible to overflow as spoken of on column 5, lines 30-34.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fedorkow et al. (U.S. 7,230,917) (hereinafter "Fedorkow") in view of Stiliadis et al. (U.S. 6,134,217) (hereinafter "Stiliadis").

Regarding claim 6, *Fedorkow* teaches the method of claim 1. *Fedorkow* does not teach "determining the new enqueue slot according to a pre-sort deficit round robin enqueueing scheme".

However, *Stiliadis* teaches a method a system for packet scheduling using a circular queue where deficit round robin scheduling is utilized as spoken of on column 3, lines 33-38, as well as column 22, lines 29-35.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to combine the deficit round robin scheduling teachings of *Stiliadis* with the teachings of *Fedorkow* in order to provide an effective queuing scheme that allows for variable frame size as spoken of on column 3, lines 33-38 of *Stiliadis*.

Allowable Subject Matter

10. Claims **9-12 and 14-16** are allowable over the prior art of record.
11. Claims **3-5** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
12. The following is a statement of reasons for the indication of allowable subject matter:

Regarding *amended claim 3*, *Fedorkow* teaches the method of claim 1. *Fedorkow* as well as the other prior art of record does not teach "resetting the LES pointer to designate the old enqueue slot, if the overflow condition would result from enqueueing the queue element" in combination with the other limitations of claim 3.

Regarding claims **4 and 5**, these claims are further limiting to claim 3 and are thus also allowable over the prior art of record.

Regarding *amended claim 9*, this claim is now allowable for the reasons indicated in the previous Office Action in regard to now cancelled claim 13.

Regarding claims **10-12 and 14-16**, these claims are further limiting to claim 9 and are thus also allowable over the prior art of record.

Response to Arguments

13. Applicant's arguments filed 1/2/08 have been fully considered but they are not persuasive.

Regarding *amended* claim 1, Applicant asserts that claim 1 is now allowable since subject matter of now cancelled dependent claim 2 and claim 3 (previously deemed allowable) have been added.

However, in the previous Office Action, claim 3 was objected to as being dependent upon a rejected base claim, but allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In Applicant's amendment to claim 1, only a portion of the added limitations of claim 3 was added to claim 1. As a result of this, further consideration and grounds of rejection are provided for *amended* claim 1 above.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL J. MOORE, JR., whose telephone number is (571)272-3168. The examiner can normally be reached on Monday-Friday (7:30am - 4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing F. Chan can be reached at (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wing F. Chan/
Supervisory Patent Examiner, Art Unit 2619
7/16/08

/Michael J. Moore, Jr./
Examiner, Art Unit 2619